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ABSTRACT

The purpose of the Rehabilitation Indicators Project is to develop a method, rehabilitation indicators (RI's), for defining multi-dimensionally the benefits that accrue to rehabilitation clients. RI's are presented as descriptors of observable elements of the rehabilitation client's life space with each descriptor inherently meaningful to client functioning. RI's cover a wide range of content (e.g., vocational, self-care, social, etc.) and are organized through two mechanisms, i.e., a taxonomy and a branching structure of general-to-specific descriptors. The basis for the RI taxonomy is discussed in terms of eco-behavioral and cognitive learning models of functioning, with the evolution of four types of RI's from the model: statuses, activities, skills and environmental elements. Potential uses of RI's are appropriate: (1) with clients/patients in a broad range of disability groups, such as physical, sensory, developmental or psychiatric; (2) in a definition of benefits, gains, outcomes, changes, goals, and criteria; and (3) as a generic tool. (Author/HLM)

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REHABILITATION INDICATORS: AN OVERVIEW*

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The Rehabilitation Indicators (or RI) Project can be viewed as one part of a long-term movement toward benefit and cost analysis in rehabilitation and other social programs (c.f., Averous, 1971; Reagles & Wright, 1972; Conley, 1974; and Noble, 1977). The RI Project's emphasis has been placed on developing a tool to delineate the benefits produced within a broad spectrum of rehabilitation programs, including vocational, psychosocial and medical. The need for better delineation of benefits in rehabilitation grew out of two sets of factors: (1) political forces in the late sixties and early seventies that demanded greater program accountability (Brown, et al., 1977), with the threat of a reduction in resources as a constant background factor and (2) insufficient methods to meet this demand, in terms of defining benefits associated with rehabilitation training, research and service programs. At that time benefits were often defined in narrow terms, pertaining more to categorical program goals, such as returning clients to gainful employment, than to the broad range of client outcomes actually obtained in rehabilitation (c.f., Rubin & Salley, 1973). Thus, the major goal when the RI Project began was to contribute a multi-dimensional tool which would expand the focus of benefit/cost studies in rehabilitation. However, as we continued to develop RI's and to test them in the field we saw that the RI tool was very basic, (more like a hammer than a lawn mower); it was so simple that with careful design and forethought it could be made useful in serving many purposes, not just delineating benefits.

Before describing these multiple uses of RI's, I'd like to provide a context by describing the basic characteristics of the RI tool:

1. RI's are descriptors of elements of the life space of clients'. These elements span a wide range of content, including cognitive, mobility, self-care, vocational, social, recreational, educational, and political aspects

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of client functioning. RI examples included "shampoos hair", "resides in nursing home" and "dines in a restaurant".

2. RI's focus solely on observable and inherently meaningful elements of functioning: elements such as "reading a newspaper" and "walking up and down stairs", avoiding non-observable elements such as ratings of "self-esteem" or "job satisfaction". RI's also exclude components of functioning such as "flexes arm", which we label non-meaningful because components only acquire meaning when linked to purposes, such as "brushes teeth".
3. The basic use of each indicator is to describe a specific client's life space at any one point in time. For example, the RI descriptor "eats with fork" can be used to describe functioning as follows: "Yes, this client eats with a fork"; or at a higher measurement level, "This client eats with a fork, 21 times per week".
4. RI's are organized into a lexicon, using several principles of organization, including a taxonomical structure based on a conceptual model, a branching system of general and specific indicators, and modules of indicators that are disability-relevant.

To summarize the characteristics of the RI tool: It is a lexicon that lists a broad sample of observable and meaningful elements of the life space of clients'; the lexicon is organized into modules, a branching structure and a taxonomy of client variables. The primary use of the RI's is to describe aspects of client functioning.

For the most part, these characteristics were incorporated into the RI tool for three reasons:

1. In order to avoid credibility problems which ensue when evaluation of program effectiveness is tied to narrow measures of non-observable variables, we chose to develop a multi-dimensional tool of observable variables; the

tool does not define all variables of importance in rehabilitation, but it does assume that accountability and program evaluation should avoid being tied solely to ratings and other subjective measures.

2. Rehabilitation Indicators focus only on client variables even though rehabilitation programs may effect changes in non-client variables, e.g., in unemployment rates. This sole focus on the client's life space was a choice we made based on the assumption that rehabilitation programs are established primarily to effect changes in the lives of persons with disabilities. Accountability and program evaluation, thus, should be tied to achievement of primary program goals.
3. The complex organization of the RI lexicon is a characteristic that was created to allow flexible use, for defining benefits of rehabilitation programs and for other uses to which we alluded earlier.

As a context for exploring these uses, we'll now turn to a discussion of (1) the taxonomy which was developed to organize the lexicon and (2) the definitional issues we encountered vis a vis "benefits".

First, the taxonomy: It is based upon the assumption that of all client variables that can change as a result of rehabilitation, change in elicited behavior is primary, with other changes defined as instrumental. Given this assumption, and the characteristics of RI's previously discussed, the RI Project had to define which sets of behavioral and which sets of instrumental variables would be covered within the RI tool. In terms of functioning, we believed it was important to describe "what people do", "what people can do", and "what in the environment supports and hinders behavior". These ideas were sumarized in a model of client and rehabilitation system variables (Figure 1), in the traditions of interactionist, eco-behavioral and cognitive learning models of behavior (c.f., Kantor, 1924, 1926; Lewin 1935, 1936;

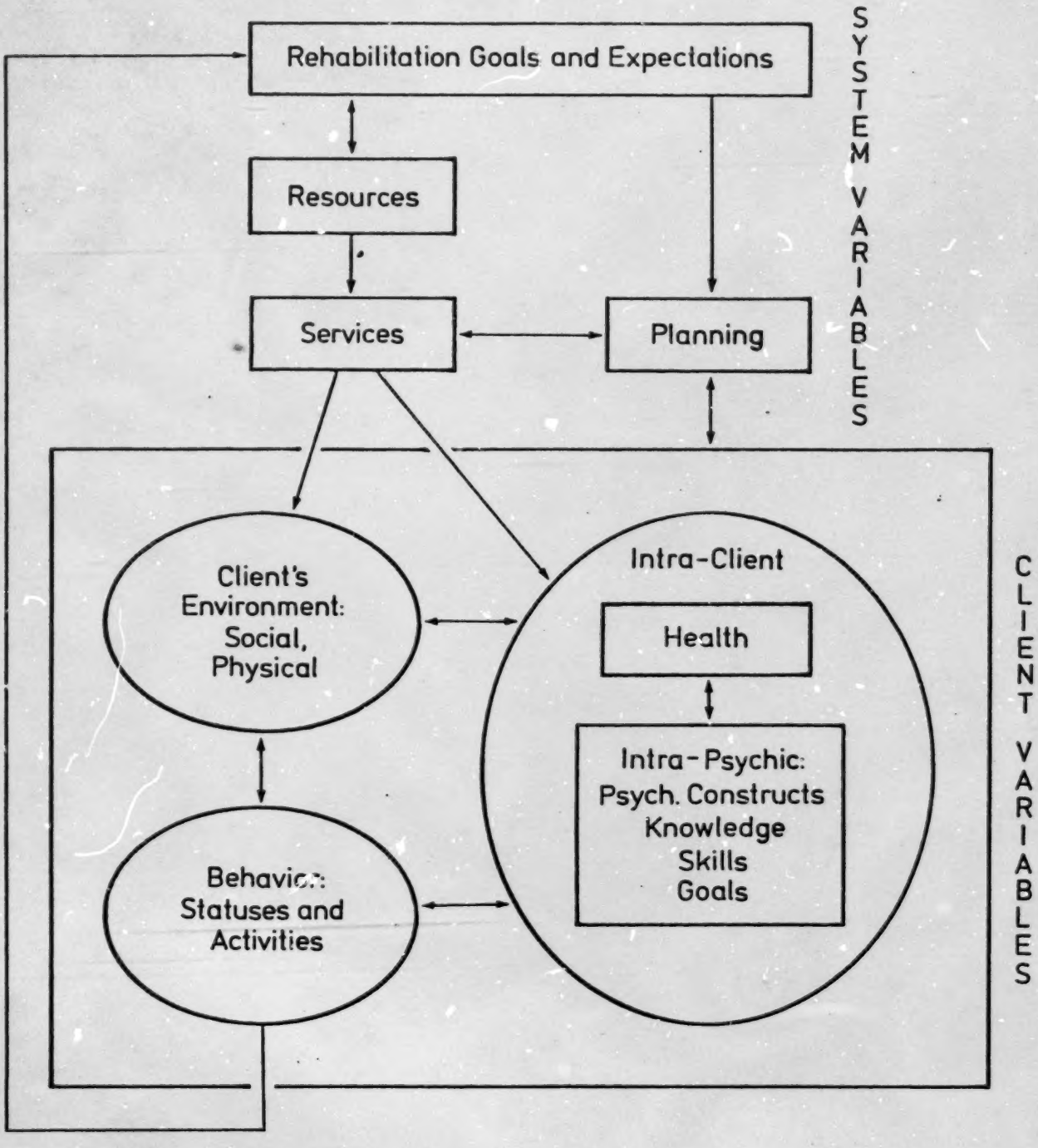

FIGURE 1:

Model of Rehabilitation Processes and Client Variables

Murray, 1938; Angyal, 1941; Tolman, 1951; Rotter, 1954; Jessor, 1956, 1958; Sells, 1963a, 1963b, 1966; Barker, 1968, 1978; Bowers, 1973; Mischel, 1973). Thus, "what people do" (or their elicited molar behavior which is evidenced in day to day living) is defined as being a function of person variables, including skills or "what people can do", interacting with environmental variables.

This model of client variables is presented in the context of a rehabilitation system's providing input to effect change. The system's input is directed at person variables such as skills, knowledge, and beliefs and at environmental variables such as the availability of a prosthesis. Thus, during rehabilitation, change in elicited behavior (for example, obtaining a job) will be a function of interactive, instrumental changes in the environment and/or person, perhaps the person's acquisition of job-seeking skills in conjunction with an employer's offering a suitable job. The model specifies that changes in elicited behaviors serve as primary feedback to the rehabilitation system's efforts. Thus, benefits and outcomes associated with rehabilitation can be taxonomized in terms of B, P and E, with B defined as primary and P and E as instrumental. This eco-behavioral model, as well as the previously discussed characteristics, were used to taxonomize RI's:

The RI Lexicon includes two sets of behavioral descriptors. Each focuses on different aspects of multi-dimensional elicited behaviors:

1. STATUS INDICATORS describe categorical statuses of importance to rehabilitation clients (e.g., competitive employment). Status RI's cover several functioning areas, including living arrangements and vocational and educational statuses.

2. A second source of variability in the client's elicited behavior resides in the activities the client selects: their nature (e.g., "going to the theater", "bathing"), where they are located, their frequency, duration, etc. ACTIVITY PATTERN INDICATORS describe these aspects of functioning.

In addition to descriptors of elicited behavior, the RI Lexicon also includes one set of descriptors of person variables:

3. SKILL INDICATORS are descriptors of the behavioral tools of the client, which may be instrumental to the client's attainment of primary goals. Skill indicators describe what the person can do, e.g. "can read a newspaper", which is not necessarily what the person actually does do in day to day living.

Finally, we are developing three sets of environmental descriptors:

4. PHYSICAL, SOCIAL AND PERSONAL ENVIRONMENTAL INDICATORS describe potential supports and hindrances to goal attainment that reside in the client's environment. Most measurement systems in rehabilitation ignore the client's environment and assessment of changes that occur therein. Taxonomic problems (Sells, 1963a) have contributed to this situation. However, focussing measurement on the client, while ignoring the need to assess the environment, is also based on a history of educating rehabilitation professionals to see the client as having problems rather than to see the environment producing problems.

In summary, the RI taxonomy reflects a model depicting both rehabiliation-relevant client variables and the relationship between the client and the rehabilitation system. The model provides a basis for analysis of client change and benefits during rehabilitation. To expand this idea, we'll now turn to a discussion of uses of the RI tool and begin with a definition of what we mean by a "benefit".

1. A "benefit" requires that two or more sets of descriptors obtained over time are being compared to assess change.
2. A "benefit" requires that someone assign a postive value to the change; the specific value assigned will of course, depend on the evaluator's point

of view.

3. A "benefit" must be a valued change that is attributable to rehabilitation system input, with competing explanations eliminated.

Thus, in order to use the RI tool to delineate benefits, it must be placed in a specific context where it is used to assess change in functioning and where someone has assigned a positive valence to the change and where measurement occurs in such a way that changes attributable to rehabilitation input can be partialled from total change variance.

Other possible uses of the RI tool are derivable from the three contextual dimensions just mentioned: (a) description of functioning at one point in time vs. description of change in functioning, (b) value assigned to change vs. value left unassigned, and (c) causal attribution of change vs. correlation, without attribution. Six combinations of these dimensions are depicted and labelled in Figure 2.

		DESCRIPTION (Single point) OR CHANGE (Multiple points)?			
		Description:		Change:	
VALUE ASSIGNED?				Attribution of change to the rehabilitation system?	
				Yes	No
	Yes	GOAL, CRITERION	Yes	BENEFIT	GAIN
	No	DESCRIPTION	No	OUTCOME	CHANGE

FIGURE 2: CONTEXTUAL FACTORS FOR RI MODELS OF USAGE

Figure 2 represents the idea that the neutral elements of the RI lexicon can be used to serve many basic purposes, depending on specific contextual factors. These uses include:

1. Stating a client's goals or those of a rehabilitation agency,
2. Stating criteria for clients' obtaining entry into or exit from rehabilitation settings,
3. Describing an individual client's areas of intact and disrupted functioning,
4. Assessing client changes and gains associated with rehabilitation, and
5. Assessing client benefits and outcomes attributable to rehabilitation programs.

These uses are, in brief, a function of the context in which the RI tool is placed. Needless to say, RI usage will also be a function of additional parameters, including:

1. The purposes that are to be served, e.g., program evaluation, development of a client's rehabilitation plan, etc.
2. The nature of the client population, the data gatherers, the data utilizers, and other aspects of the data collection paradigm.
3. The type of information and amount of detail needed by varying subsets of users.

The RI Project is presently field testing the RI tool in many rehabilitation settings, varying these contextual parameters to explore the use of RI's for enhancing accountability and for improving rehabilitation processes per se. Our preliminary results are very encouraging and the reactions from many utilizers have been positive; these preliminary results will not be discussed in this paper but will be published in the near future.

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